# June VCAT SFA Presentations

Nanoscale Measurements and Data

# Nanoscale Measurements and Data: External trends

- High potential for disruptive commercial technologies
- Significant public and private R&D investment
- Multi-sector impact
- Innovation and commercialization limited by inadequate metrology infrastructure

# Nanoscale Measurements and Data: Strategic need

- Achieve a technological advantage in nanometrology and a sophisticated understanding of nanotechnologies to ensure that NIST provides industry, government, and university research efforts with nanoscale measurements and data capabilities that are unmatched in the world

# Nanoscale Measurements and Data: NIST contribution

- Measurements, standards, and data that establish the accuracy and reliability of nanoscale measurement and analytical tools; materials characterization and critically evaluated data
- Measurement methods, standards, and data for nanomagnetic memory and storage devices; new measurement methods for nanolithography and beyond CMOS (e.g., molecular electronics)
- Reproducible measurement techniques and uncertainty specification for nanobiotechnology research; measurement science to advance quantum computing and characterize quantum electronic devices

# Nanoscale Measurements and Data: Anticipated impact

- More efficient and productive R&D; accelerated development of innovative nanotechnology products
- Accelerated commercial development of nanomagnetic technologies and next-generation microelectronic devices
- Accelerated development of nanoscale biomaterials and new health care technologies; accelerated development of new computing technology with impacts on homeland security.